

REMARKS/ARGUMENTS

Claims 1 - 12, 14 and 17- 19 are pending in the application and stand rejected. In view of the foregoing amendments to the claims and the following remarks, Applicant respectfully requests allowance of the application.

Rejections Under 35 U.S.C. §102

Claims 1, 13, 14 and 18 have been rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 2006/0107995 to Kovacik et al. ("Kovacik"). Applicant respectfully traverses this rejection. Fig. 3 of Kovacik et al shows fuel entering at the top of the drawing, immediately being ignited at burner 24, and then exhaust products pass through a constricting end and enter an internal SiC tube 26. It is not clear whether there is any significant expansion of the exhaust products at 26. To avoid arguments about whether that is the case, Applicant has amended Claim 1 to recite that "the combustor comprises a first section and a second section positioned between the inlet and the first section, wherein a cross-sectional width of the first section is greater than a cross sectional width of the second section;" and that the "internal expansion step comprises transitioning from the second section to the first section, and combustion of the fuel occurs at the first section".

Clearly combustion of the fuel in Kovacik occurs immediately upon entry into the device at burner 24, not after an internal expansion step which occurs at a first section having a greater cross-sectional width than a second section and positioned after the second section as called for in Applicant's amended Claim 1. The expansion step is a highly advantageous feature of Applicant's invention which allows for control of the combustion process and allows for even temperature distribution across the outer wall of the internal chamber of the first section. Moreover, the constriction of Kovacik (immediately above the SiC tube 26) cannot be the second section as claimed, since it is positioned after burner where combustion occurs, not between an inlet and a first section. In a similar manner, the tube 26 cannot be the first section as claimed, since combustion does not occur there.

The language of original Claim 13 has been essentially incorporated into Claim 1 to clarify the sizes of the components recited. Claim 13 has been amended to recite that the

emitter is remote from the second section, as is clearly shown in Applicant's Fig. 1, for example. Since no combustion occurs at the second section, no emitter is required at that component. Claims 14 and 18 now depend from Claim 1 and are therefore allowable for at least the same reasons as Claim 1. Applicant respectfully requests that this rejection be withdrawn.

Rejections Under 35 U.S.C. §103, Kovacik in View of Gardner

Claims 2-5, 7-12 and 17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacik in view of U.S. Patent No. 6,786,716 to Gardner et al. ("Gardner"). Applicant respectfully traverses this rejection. Claims 2-5, 7-12 and 17 depend from Claim 1 which is allowable over Kovacik for the reasons stated above. Nothing in Gardner teaches or suggests a thermophotovoltaic device with combustion after an expansion step. Applicant therefore respectfully requests that this rejection be withdrawn.

Rejections Under 35 U.S.C. §103, Kovacik and Gardner in View of Admitted Prior Art/Ferguson

Claim 6 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacik and Gardner, and further in view of either Applicant's admitted prior art or Ferguson, et al., "A Highly Efficient NiO-Doped MgO matched Emitter for Thermophotovoltaic Energy Conversion," Material Science and Engineering B83 (2001) pp. 35-41 ("Ferguson"). Applicant respectfully traverses this rejection. Claim 6 depends from claim 1 which is allowable over Kovacik et al and Gardner et al for the reasons stated above. Nothing in either Applicant's admitted prior art or Ferguson et al. teaches or suggests a thermophotovoltaic device with combustion after an expansion step. Applicant therefore respectfully requests that this rejection be withdrawn.

Rejections Under 35 U.S.C. §103, Kovacik and Gardner in View of DuPoy

Claim 15 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacik and Gardner, and further in view of U.S. Patent No. 6,043,426 to DePoy et al. ("DePoy"). Applicant respectfully traverses this rejection. Claim 15 depends from claim 1 which is allowable over Kovacik and Gardner for the reasons stated above.

Nothing in DuPoy teaches or suggests a thermophotovoltaic device with combustion after an expansion step. Applicant therefore respectfully requests that this rejection be withdrawn .

Rejections Under 35 U.S.C. §103, Kovacik in View of Fraas

Claim 19 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacik in view of U.S. Patent No. 6,489,553 to Fraas et al. ("Fraas"). Applicant respectfully traverses this rejection. Claim 19 depends from claim 1 which is allowable over Kovacik and Gardner for the reasons stated above.

Nothing in Fraas teaches or suggests a thermophotovoltaic device with combustion after an expansion step. Applicant therefore respectfully requests that this rejection be withdrawn and the claims be allowed.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

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